

A New Variable Star of Type IV. By the Rev. T. E. Espin, M.A.

On the night of 1893 September 16, while sweeping on the confines of *Lyra* and *Cygnus*, I came upon a fine red star which was found to be missing in *Argelander*. The place of this star for 1855 is

R.A. $19^h 15^m 2^s.7$ Decl. $+37^\circ 36' 6$

The place depending on D.M. $+37^\circ 34.20$.

The following are my observations of the star :—

1893 Sept. 16, Mag. 9.0

Nov. 13, Mag. 9.0

On the first of these nights the spectrum was believed to be Type IV., but its faintness made me feel some uncertainty about it. On March 29 I set for this star in strong twilight, and was at once struck by its increased brilliancy. I rated it 8.3, and found the bands quite obvious, even in the dawn. On April 10 I set for it again, and rated it 8.5. The spectrum was found to be Type IV., but band No. 9 of Dunér's nomenclature is of such a size and intensity as to cause the spectrum to appear a mere fragment. With careful attention I could make out band No. 6, but as faint as No. 9 was strong. The first appearance of the spectrum was unique, as it appeared continuous, but with the least refrangible end completely absorbed. The telescope was turned immediately afterwards upon *Es-Birm* 608, a fourth-type star, somewhat brighter, and the contrast with the perfectly normal Type IV. spectrum was very striking. Unfortunately a temporary derangement of the second spectroscope prevented fuller observation.

Towlaw, Darlington:
1894 April 11.

Note on the Red Spot of Jupiter. By Joseph Gledhill, Bermerside Observatory, Halifax.

This object was carefully observed whenever seen on the disc. The whole outline was never steadily seen between 1893 January and 1894 March. No trace of colour was ever seen within the faint elliptic outline. Sometimes the following end of the ellipse was better seen than the preceding end ; at other times the two ends appeared stronger than the middle part. The best view was obtained on 1893 December 23, when the whole outline was distinctly seen at moments of best definition ; the spot was then not far from the western limb. It was last seen on 1894 February 9, as a very faint elliptic outline without colour.

Observations of the Phenomena of Jupiter's Satellites at Bermerside Observatory, Halifax, in the years 1892 and 1893. By Joseph Gledhill.

Day of Obs.	Sateli- tate.	Pheno- menon.	Phase.	G.M.T. of Observation.	N. Almanac Time.	Remarks.
1893.				h m s	h m s	
Jan. 2	III.	Tr. I.	Ext. contact.	8 40	8 39	Definition poor.
			Bisection.	8 43 30		
			Int. contact.	8 46 45		
4	I.	Oc. D.	Ext. contact.	6 21 10	6 22	Misty.
			Bisection.	6 23 14		
			Just gone.	6 25 7		
	I.	Ec. R.	First seen.	9 54 41	9 54 15	Very misty; planet low.
			Half out?	9 56		
			Full?	9 59		
13	I.	Ec. R.	First seen.	6 19 14	6 18 58	Often cloudy.
			Half out?	6 21		
			Full?	6 23		
	III.	Ec. D.	Last seen.	8 25 2	8 23 13	
	III.	Ec. R.	First seen.	10 7 32	10 11 39	Planet low; bad sky.
			Half out?	10 9		
			Full?	10 12 30		
14	II.	Tr. I.	Ext. contact.	7 16 27	7 18	Fair definition.
			Bisection.	7 17 30		
			Int. contact.	7 19 34		
16	II.	Ec. R.	First seen.	6 35 15	6 34 31	
			Half out?	6 37		
			Full?	6 40		
20	III.	Oc. D.	Ext. contact.	6 41 11	6 46	Fair definition.
			Bisection.	6 45 17		
			Last seen.	6 50 34		
	I.	Ec. R.	First seen.	8 14 36	8 14 44	
			Half out?	8 16		
			Full?	8 19		
	III.	Oc. R.	Bisection.	9 10 14	9 16	Planet low; bad defini-
			Ext. contact.	9 13 17		tion.
27	I.	Oc. D.	Ext. contact.	6 42 13	6 43	Poor definition.
			Last seen.	6 45 9		